NON-PUBLIC?: N
ACCESSION #: 8904280195
LICENSEE EVENT REPORT (LER)

FACILITY NAME: D.C. COOK NUCLEAR PLANT - UNIT 1 PAGE: 1 OF 3

DOCKET NUMBER: 05000315

TITLE: Engineered Safety Features (Reactor Trip) from Intermediate Range High Flux Trip Which Had Not Reset Due to Method for Setting Reset Setpoint

EVENT DATE: 03/18/89 LER #: 89-003-00 REPORT DATE: 04/21/89

OPERATING MODE: 1 POWER LEVEL: 010

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: T.P. Beilman
Instrumentation and Control Department
Superintendent TELEPHONE: 616-465-5901

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE TO NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On March 18, 1989 at 0611 hours while Unit One was shutting down in preparation for refueling, an Engineered Safety Features (ESF) actuation (reactor trip sequence) occurred. The reactor trip was due to a standing high flux trip on the Intermediate Range (IR) Nuclear Instrumentation Channel I (N-35) which had not reset prior to power dropping below Permissive P-10 (approximately 9 percent) which automatically unblocks the IR high flux reactor trip.

The low value for the trip reset setpoint was due to the methodology used to determine the current equivalent values of the trip setpoint which resulted in a conservatively low setpoint for both the reactor trip and the trip reset.

To prevent recurrence, changes are being made in the method used to determine the current equivalent values for the trip and trip reset setpoints that will

ensure the trip setpoint is conservative and will also ensure the reset setpoint will be above P-10. These changes will be in effect prior to Unit One going above P-10.

END OF ABSTRACT

Conditions Prior To Occurrence

Unit One was in Mode One (power operation) at approximately 10 percent power.

Description of Event

On March 18, 1989 Unit One was being shut down in preparation for a refueling outage. At 0611 hours, an Engineered Safety Features (ESF) actuation (reactor trip sequence) (EIIS/JE) occurred due to a standing high flux level trip signal on Intermediate Range Nuclear Instrumentation (NI) Channel I (EIIS/IG-CH) (N-35). The high flux level trip had not reset, as expected, prior to reactor power going below the Permissive P-10 setpoint (3 out of 4 Power Range NI channels less than or equal to 9 percent) which automatically unblocks the IR high flux level trip.

Following the trip sequence opening of the reactor trip breakers (EIIS/JE-BKR), turbine (EIIS/TA-TRB) trip, insertion of the reactor control rods (EIIS/AA- ROD), feedwater isolation (EIIS/JB)! and automatic starting of the motor driven auxiliary feedwater pumps (EIIS/BA-P), Operations personnel immediately implemented the Emergency Operating Procedure 1 OHP 4023.E-0 to verify proper response of the automatic protection system (EIIS/JC) and to assess plant conditions for initiating appropriate recovery actions. There was no automatic or manual actuation of the safety injection system (EIIS/BQ).

The investigation following the trip found that N-35 was operating correctly. However, the current equivalent value for the trip reset point was set lower than anticipated, resulting in the trip signal still being present when it was unblocked below P-10. This was the result of the methodology used to determine the current equivalent value of the trip and subsequently the trip reset setpoints.

The current equivalent values for the trip setpoint are calculated by the Nuclear section. This value is then rounded down to the nearest whole number. Rounding down the number ensures that the trip setpoint will be conservative with respect to Technical Specifications. The value is rounded to a whole number to facilitate calibrating the channel within the span of the indication.

In an ideal situation, the current equivalent value would exactly equal the 25 percent power (high flux level trip setpoint), and the reset setpoint which is calibrated at half the current equivalent value (per Westinghouse instructions) would then be at 12.5 percent power well above P-10. However, because of the rounding down, both the trip and trip reset setpoints are set at some lower value than the ideal and can, as in this event, result in the trip reset being set below P-10.

Cause of the Event

The reactor tripped on an Intermediate Range high flux level trip signal which had not reset prior to reactor power going below P-10 and unblocking of the IR trip. The cause of the trip signal not resetting as anticipated was due to the method of determining the current equivalent for the trip setpoint which, in this event, resulted in the trip reset setpoint being set below P-10.

Analysis of Event

This event is being reported in accordance with 10 CFR 50.73(a)(2)(iv) as an event that resulted in an unplanned automatic actuation of the Engineered Safety Features, including the Reactor Protection System.

The automatic protection responses, including reactor trip and its associated actuations were verified to have functioned properly as a result of the ESF actuation. Based on the above, it is concluded that the event did not constitute an unreviewed safety question as defined in 10 CFR 50.59(a) (2) nor did it adversely impact the health and safety of the public.

Corrective Action

Immediate corrective action involved Operations personnel implementing plant procedures to verify proper response of the automatic protection system and to assess plant conditions for initiating of appropriate recovery actions.

Upon determination of the root cause of the event, the trip and trip reset setpoint were evaluated for the Unit Two Intermediate Range Channels. Channel II (N-36) was found with a trip reset setpoint below P-10. The setpoint was recalculated and the channel calibrated to correct the situation. In order to prevent recurrence, the method for determining the trip and trip reset setpoint is being changed to ensure that while the trip setpoint will be conservative, the trip reset setpoint will be above P-10. These changes will be in effect prior to Unit One going above P-10.

Failed Component Identification

None.

Previous Similar Events

None.

ATTACHMENT 1 TO 8904280195 PAGE 1 OF 1

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Cook Nuclear Plant
P.O. Box 458
Bridgman, MI 49106 AEP
616 465 5901 INDIANA
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POWER

April 21, 1989

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Operating License DPR-58
Docket No. 50-315

Document Control Manager:

In accordance with the criteria established by 10 CFR 50.73 entitled Licensee Event Reporting System, the following report is being submitted:

89-003-00

While resolution of subject event, including preparation of LER, was completed within the 30 day requirement, an administrative oversight resulted in a 4 day delay in the submittal of this LER.

Sincerely,

W. G. Smith, Jr.
Plant Manager

WGS:clw

Attachment

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